

**WHAT IS CLAIMED IS:**

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1. MoC produced by heating a precursor material in a first heating zone to a first temperature in the presence of a reducing gas and a carbonizing gas and moving the precursor material to a second heating zone that is heated to a second temperature that is at least 100°C hotter than the first heating zone.

2. Mo<sub>2</sub>C produced by heating a precursor material in a first heating zone to a first temperature in the presence of a reducing gas and a carbonizing gas and moving the precursor material to a second heating zone that is heated to a second temperature that is at least 100°C hotter than the first heating zone.